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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,611	07/24/2003	Daniel Roy Bolar	10011050-1	7930

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EXAMINER	
CHEEMA, UMAR	
ART UNIT	**PAPER NUMBER**
2109	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/625,611	BOLAR ET AL.	
	Examiner	Art Unit	
	Umar Cheema	2109	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "22", "28", "29". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Software, *per se*:

The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

EXAMPLES:

1. A computer program product for . . .

4. **Claims 6-19** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 4-8, 20** are rejected under 35 U.S.C. 102(e) as being anticipated by Allavarpu et al (US 7,010,586).

7. Regarding **claim 4,** Allavarpu et al teach a network management support interface that automatically integrates operations utilizing a Common Object Request Broker Architecture (CORBA) protocol (abstract, col. 4, lines 19-38), the interface comprising: a system rule engine that receives and processes events coming from a CORBA gateway (abstract, col. 1, lines 5-10, lines 22-30, col. 4, lines 19-32); and a CORBA gateway having a rule engine to connect one of: connect a CORBA proxy object of the CORBA gateway to a CORBA server object of a device (abstract, col. 4, lines 33-67, col. 5, lines 1-8); and connect a CORBA proxy object of a device to a CORBA server object of the CORBA gateway (abstract, col. 4, lines 33-67, col. 5, lines 1-8).

8. Regarding **claim 5**, Allavarpu et al teach a Common Object Request Broker Architecture (CORBA) gateway in a network management support system, the CORBA gateway automatically integrating operations in the gateway (abstract, col. 4, lines 19-38), the CORBA gateway comprising: a rule engine (col. 1, lines 5-10, lines 22-30);

an Interface Repository (IFR) [Note: IFR is the component of the ORB that provides persistent storage of interface definitions] to determine, programmatically, data types and operations defined in a third party Interface Definition Language (IDL) (col. 4, lines 53-67, col. 6, lines 49-60); and

a CORBA translator (col. 11, lines 64-67, col. 12, lines 1-6), coupled to the rule engine and the IFR, to translate the data types and operations into an object-oriented network management system and operations support system and generate a CORBA request on a remote CORBA object (abstract, col. 13, lines 24-34).

9. Regarding **claim 6**, Allavarpu et al teach a computer-readable medium having computer-executable instructions stored thereon (col. 10, lines 40-45, lines 59-64), wherein the computer-executable instructions include:

using a CORBA software gateway to invoke operations on a remote CORBA object; and using the CORBA software gateway to facilitate remote invocation of network management system rules via a CORBA interface (fig. 2, col. 11, lines 13-39).

10. Regarding **claim 7**, Allavarpu et al teach the computer-readable medium of claim 6, wherein using a CORBA software gateway to invoke operations on a remote CORBA object (col. 10, lines 40-45, lines 59-64) comprises:

processing at least one of: a resulting return value, an out argument, and an exception (fig. 3, col. 11, lines 40-51).

11. Regarding **claim 8,** Allavarpu et al teach the computer-readable medium of claim 6, wherein using the CORBA software gateway to facilitate remote invocation of network management system rules via a CORBA interface (col. 10, lines 40-45, lines 59-64) comprises:

setting time out values to a predetermined value after which an outbound request is deemed to have failed (fig. 3, col. 11, 40-64).

12. Regarding **claim 20,** Allavarpu et al teach a CORBA gateway, comprising: a development time mapper, to obtain data types and operation definitions from an Interface Repository and translate data types and operation definitions obtained into data types and definitions that are written directly to a predetermined database to provide mapping information (col. 17, lines 30-46, fig. 8); and

a runtime translator, to translate rule operations into CORBA operations and CORBA operations into rule operations utilizing the mapping information comprising at least one of encoded Management Information Model data type definitions (col. 11, lines 64-67, col. 12, lines 1-6), encoded rule method definitions and encoded rule method formal parameter definitions that were written to the predetermined database by the development time mapper, wherein the mapping information is read by the CORBA gateway at startup and cached (col. 4, lines 58-67, col. 5, lines 1-8,).

13. **Claims 9-19** are rejected under 35 U.S.C. 102(e) as being anticipated by Zhdankin et al (US 6, 757, 899).

14. Regarding **claim 9,** Zhdankin et al teach a computer-readable medium having computer-executable instructions for a rule writer stored thereon to make outbound CORBA calls using a CORBA gateway (col. 4, lines 27-30), wherein the computer-executable instructions include: identifying a remote server object upon which an operation is to be invoked (col. 4, lines, 37-41); obtaining an object reference to the server object; and creating a client side proxy object (col. 2, lines 8-112, col. 4, lines 35-40).

15. Regarding **claim 10,** Zhdankin et al teach the computer-readable medium of claim 9, further comprising computer-executable instructions including at least one of: informing the CORBA gateway that a connection to the server object, taking a form of a proxy object, is to be cached (col. 4, lines 30-41);
instructing operators to provide access to and control the cache of proxy objects (col. 4, lines 18-26); naming the operation to be invoked on the server object (col. 1, lines 30-35); identifying an object-oriented network management system and operations support system attribute in which a return value is to be placed (col. 4, lines, 37-41);
setting attribute values to be passed to the operation as input arguments and identifying object-oriented network management system and operations support system attribute values that output argument values are to be placed in (col. 1, lines 27-31, col. 8, lines 28-32);

identifying, if an exception occurs, an object-oriented network management system and operations support system attribute value that exception date is to be placed in (fig. 6); invoking the operation of a remote COBRA server object and processing at least one of resulting return values, out arguments and exceptions returned by the operation; and where desired, setting a predetermined timeout value (fig. 6, col. 2, lines 3-15).

16. Regarding **claim 11,** Zhdankin et al teach the computer-readable medium of claim 9, further comprising, before the CORBA gateway invokes the CORBA object, computer-executable instructions including one of: obtaining a reference to the object (col. 2, lines 8-11); and associating resolved object references with a string key value that is reusable (col. 1, lines 42-45, 60-65).

17. Regarding **claim 12,** Zhdankin et al the computer-readable medium of claim 9, further comprising computer-executable instructions including one of: implementing a Least Recently Used (LRU) scheme to keep a number of cached objects under a predetermined count; and freezing proxy objects in the cache (fig. 6, col. 5, lines 40-45).

18. Regarding **claim 13,** Zhdankin et al teach the computer-readable medium of claim 9, further comprising computer-executable instructions including one of: using an object-oriented network management system and operations support system attribute that controls how an object reference is managed by a object cache (col. 1,lines 12-25,

48-43); and mapping CORBA operations to an object-oriented network management system and operations support system rule method that is then called from gateway analysis rules (fig. 2, col. 4, lines 60-67, col. 5, lines 5-12).

19. Regarding **claim 14,** Zhdankin et al teach the computer-readable medium of claim 9, further comprising computer-executable instructions including one of: declaring an object-oriented network management system and operations support system rule method using a method name and, where desired, formal parameters (col. 2, lines 5-10, col. 5, lines 1-10); and mapping a CORBA defined operation into an object-oriented network management system and operations support system only once (fig. 2, col. 4, lines 60-67, col. 5, lines 5-12).

20. Regarding **claim 15,** Zhdankin et al teach the computer-readable medium of claim 9, wherein one of: accessing, by the CORBA gateway mapping process, the object-oriented network management system and operations support system database directly (col. 1, lines 42-46), and the object-oriented network management system and operations support system is one of: operating and not operating before the mapping process is executed (fig. 2, col. 4, lines 60-67, col. 5, lines 5-12); and using a CORBA Interface Repository (IFR) to determine a CORBA operation and data types and exceptions used by the CORBA operation (fig. 5, col. 7, lines 45-54).

21. Regarding **claim 16,** Zhdankin et al teach the computer-readable medium of claim 9, further comprising computer-executable instructions including at least one of: creating, via CORBA gateway IDL mapping, Abstract Syntax Notation (ASN) data types in an object-oriented network management system and operations support system database to be mapped to and from CORBA data types by the CORBA gateway (col. 2, lines 66-67, col. 3, lines 1-5, fig. 1);
encoding information required to map the data types in the data type names stored in the object-oriented network management system and operations support system database (col. 1, lines 42-46, col. 6, lines 33-40); creating attribute definitions in the object-oriented network management system and operations support system database that are used for operation return values, arguments and exceptions (col. 4, lines 65-67, col. 5, lines 1-10);
creating a rule method for each mapped IDL operation; encoding an IDL operation name in the rule method name (col. 2, lines 66-67, col. 3, lines 1-5); and encoding information required to map a rule method to a CORBA operation in the method name and the attribute names of formal parameters of the method (col. 5, lines 43-55).

22. Regarding **claim 17,** Zhdankin et al teach a computer-readable medium having computer-executable instructions stored thereon to facilitate making inbound CORBA calls using a CORBA gateway (col. 4, lines 27-30), wherein the computer-executable instructions include at least one of:

creating server objects, wherein a single server object represents a single IDL interface (col. 2, lines 1-8); creating multiple server objects that implement different interfaces (col. 2, lines 10-17, fig. 6); creating multiple server objects to implement a same interface; accessing a previously created server object (fig. 6, col. 8, lines 36-45, col. 2, lines 5-17); deleting the previously created server object (fig. 6, col. 8, lines 36-45); disabling the previously created server object from accepting inbound calls; re-enabling a disabled server object (fig. 6); providing server object references to external processes; associating an inbound operation call to a rule set which is executed when the CORBA operation is invoked (col. 4, lines 35-41); setting an attribute value and send the attribute value back to a client as one of: a return, an out, and an exception value; and processing input arguments to the CORBA operation as object-oriented network management system and operations support system attribute values (col. 8, lines 46-57, fig: 6).

23. Regarding **claim 18,** Zhdankin et al teach the computer-readable medium of claim17, wherein the computer-executable instructions further include: creating a server object and a reference to the object by an external client before allowing the client to invoke operations on the object (col. 4, lines18-26).

24. Regarding **claim 19,** Zhdankin et al teach a computer-readable medium having computer-executable instructions stored thereon to make inbound CORBA calls using a CORBA gateway (col. 4, lines 27-30), wherein the computer-executable instructions

include at least one of: creating a server side object and making the server side object available to a remote client via the CORBA gateway of the present invention (fig. 2, col. 4, lines 60-67, col. 3, lines 1-12); and calling a rule method when an operation on the object is invoked by the remote client so that the rules process attributes that input arguments were mapped into (fig. 6); setting an exception attribute to indicate one of: the absence and the existence of an exception; and if no exception is indicated, setting a value of a return value and sending a reply to the remote client (col. 26-36).

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

26. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

27. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhdankin et al (US 6,757,899) in view of Allavarpu et al (US 7,010,586).

28. Regarding **claim 1**, Zhdankin et al teach a Common Object Request Broker Architecture (CORBA) gateway (title, abstract), comprising: a CORBA gateway translator that compares information sent between the CORBA gateway and a remote application with predetermined rules set for determining a subsequent action to be taken and executes the predetermined rules to obtain the subsequent action (col. 1, lines 5-10, lines 15-25); and at least one of:
a CORBA server object (fig. 3 (54)) that facilitates invoking operations in the CORBA gateway by the remote application; and a CORBA client proxy object that facilitates interactively invoking operations in the remote application by the CORBA gateway (col. 1 lines 58-67, lines 30-35).

29. Zhdankin et al **do not teach a CORBA gateway translator** in their disclosure.

30. However in the same field of invention, Allavarpu et al teach a CORBA gateway translator (col. 11, lines 64-67, col. 12, lines 1-6) that compares information sent between the CORBA gateway and a remote application with predetermined rules set for determining a subsequent action to be taken and executes the predetermined rules to obtain the subsequent action (col. 13, lines 50-67, col. 14, lines 1-4).

31. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Zhdankin et al and Allavarpu et al teaching for CORBA gateway translator that compares information sent between the CORBA gateway and a

remote application. Therefore the combination of Allavarp et al and Zhdankin et al improve the system and method for managing objects over a network management system.

32. Regarding **claim 2**, combination of Zhdankin et al and Allavarpu et al teach the CORBA gateway of claim 1, wherein the CORBA gateway translator (Allavarpu: col. 11, lines 64-67, col. 12, lines 1-6) includes:
a Dynamic Skeleton Interface (DSI) [Note: DSI is a server side equivalent of Dynamic Invocation Interface (DII)] that, in an inbound call functionality, includes software that implements an Interface Definition Language (IDL) [Zhdankin: col. 2, lines 18-22] Interface without compiling in a server code generated by an IDL compiler to provide an object-oriented network management system and operations support system translation of the information received in accordance with at least one of an object-oriented network management system and operations support system Method Definitions and an object-oriented network management system and operations support system Management Information Model (MIM) [Zhdankin: col. 1, lines 58-67, col. 4, lines 51-60]; and
a rule engine (which is a software system that helps manage rules) (Allavarpu: col. 1, lines 5-10, lines 22-30), coupled to the DSI, to utilize the an object-oriented network management system and operations support system translation to invoke an object oriented network management system and operations support system rules in accordance with the object-oriented network management system and operations support system translation (Zhdankin: col. 4, lines 42-60). Therefore the combination of

Allavarp et al and Zhdankin et al improve the system and method for managing objects over a network management system.

Regarding **claim 3**, combination of Zhdankin et al and Allavarpu et al teach the CORBA gateway of claim 1, wherein the CORBA gateway translator (Allavarpu: col. 11, lines 64-67, col. 12, lines 1-6) includes: a rule engine (Allavarpu: col. 1, lines 5-10, lines 22-30), that, in a outbound calling functionality, uses the information received to generate a CORBA request in accordance with at least one of an object-oriented network management system and operations support system Method Definitions and an object-oriented network management system (Allavarpu: abstract, col. 1, lines 65-67, col. 2, lines 1-10) and operations support system Management Information Model (MIM) (Zhdankin: col. 1, lines 58-67, col. 4, lines 51-60); and a Dynamic Invocation Interface (DII) (Zhdankin: col. 2, lines 18-22), coupled to the rule engine, to invoke the CORBA request in a remote CORBA server object without compiling in a client code generated by an Interface Definition Language (IDL) compiler (Zhdankin: col. 4, lines 42-59). Therefore the combination of Allavarp et al and Zhdankin et al improve the system and method for managing objects over a network management system.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Theeten teaches an element manager common gateway

architecture system and method (US 6,968,553) and Black et al teach a system and method for providing interoperability between different programming protocols (US 2004/0039800 A1).

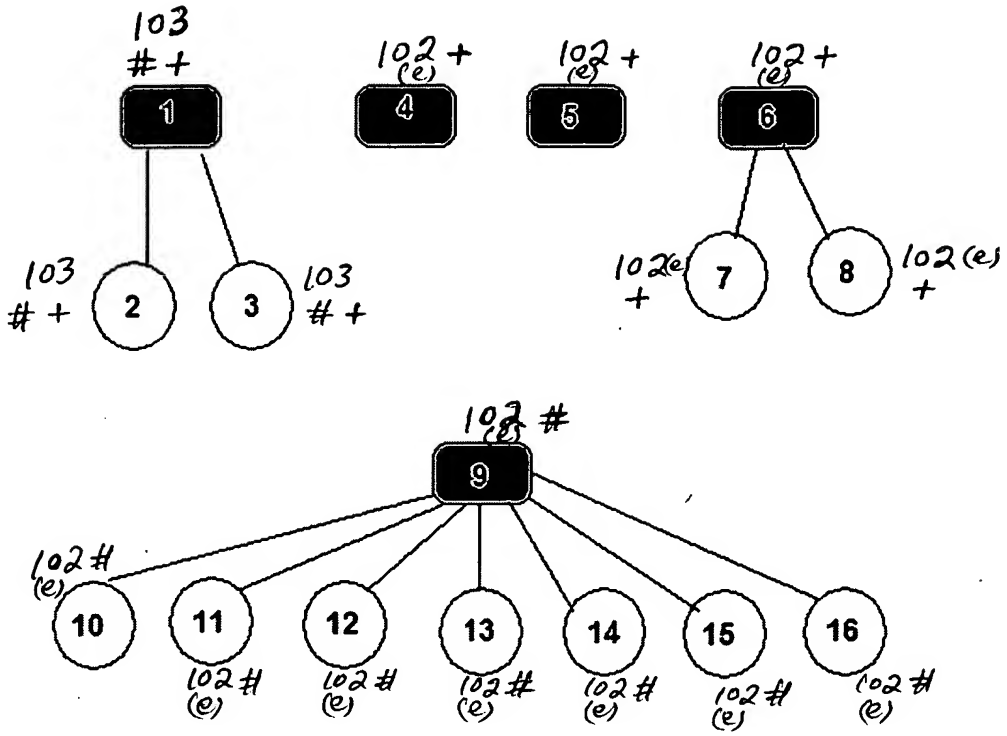
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Umar Cheema whose telephone number is 571-270-3037. The examiner can normally be reached on 7:30AM-5:00PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on 571-272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

uc

PATRICK ASSOUAD
SUPERVISORY PATENT EXAMINER



Zhdankin et al.	#
Allavarpu et al.	+

Application
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